

SUPPLEMENTAL AMENDMENT

Serial Number: 69/751,614

Filing Date: December 29, 2000

Title: VIA-IN-PAD WITH OFF-CENTER GEOMETRY

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claim 37 recites that the integrated circuit package comprises a plurality of contacts and a centerline separating the plurality of contacts into two substantially equal portions. Support for this language may be found in FIG. 9 and in the written description thereof on page 14, lines 3-24.

New independent claim 37 further recites that the plurality of lands of the substrate are respectively aligned with the plurality of contacts of the integrated circuit package. Support for this limitation may be found in the specification at page 16, lines 8-10.

New independent claim 37 further recites that the lands comprise a first group having vias offset in a first direction and a second group having vias offset in a second direction. Support may be found in original claim 25.

New independent claim 37 further recites that the geometric centers of vias of the first group of lands are offset in a first direction and the geometric centers of vias of the second group of lands are offset in a second direction. Support may be found in FIG. 9 and in the written description thereof on page 14, lines 3-24.

New independent claim 37 further recites that the first and second groups are on opposite sides of the centerline. Support may be found in FIG. 9 and in the written description thereof on page 14, lines 3-24.

New claim 38 recites that the contacts and the lands comprise a coating of solder and that, during a solder reflow operation, surface tension forces in molten solder residing between the respectively aligned contacts and lands are substantially equalized between the first and second groups of lands. Support may be found in FIG. 9 and in the written description thereof on page 14, lines 3-24.

New claim 39 is similar to pending claim 22.

New claim 40 is substantially identical to pending claim 23.

New claim 41 is substantially identical to pending claim 24.

New claim 42 recites that the lands and vias are circular. Support may be found in FIG. 9 and at page 6, lines 13-14.

New independent claim 43 is based in part upon original claim 18, as amended. In addition, claim 43 recites that the substrate comprise a centerline separating the plurality of lands into two substantially equal portions. Support for this language may be found in FIG. 9 and in the written description thereof on page 14, lines 3-24.

New independent claim 43 further recites that each via has a geometric center located in a

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region between the geometric center and the edge of its associated land, that the lands comprise a first group having vias offset in a first direction and a second group having vias offset in a second direction, that the geometric centers of vias of the first group of lands are offset in a first direction and the geometric centers of vias of the second group of lands are offset in a second direction, and that the first and second groups are on opposite sides of the centerline. Support for the foregoing language may be found at the locations indicated above for similar language appearing in new independent claim 37.

New claims 44 and 45 recite that the lands and vias are circular. Support may be found in FIG. 9 and at page 6, lines 13-14.

Conclusion

Applicants respectfully submit that claims 18-25 and 27-45 are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicants' attorney, Walter W. Nielsen, at 602/298-8920, or the undersigned attorney at 612/349-9592 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office on the date shown below.

James E. Brockschmidt

August 5, 2002

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